



UNITED STATES PATENT AND TRADEMARK OFFICE

W
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 08/748,935 | 11/13/1996 | SHIGEAKI IMAI | 44085-32 | 1970 |

20277 7590 07/14/2003
MCDERMOTT WILL & EMERY
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096

| |
|----------|
| EXAMINER |
|----------|

NGUYEN, THU V

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 3661 | 42 |

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 08/748,935 | IMAI ET AL. |
| Examiner | Art Unit | |
| Thu Nguyen | 3661 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 13 May 2003 .

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 2,3,5,9-22,29,34,35,37-40 and 45 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 9-22 and 37 is/are allowed.

6) Claim(s) 2,3,5,29,34,35,38-40 and 45 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____ .

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

| | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

Art Unit: 3661

DETAILED ACTION

The amendment filed on May 13, 2003 has been considered. By this amendment, claims 29, 38, and 45 have been amended, and claims 2-3, 5, 9-22, 29, 34-35, 37-40, and 45 are now pending in the application.

Specification

1. The disclosure is objected to because of the following informalities:
 - a. In the specification page 9, lines 3-15, several details such as the coordinates wx, wy, etc should be illustrated in the drawings.
 - b. In the specification page 12, line 12, the "end point of the axis AX1" should be illustrated in the drawings. What is the end point AX1?
 - c. In the specification page 21, lines 4-5, the "point R" should be illustrated in the drawings. What is point R?

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

Art Unit: 3661

to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 5, 29, 38-40 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (U.S Patent No. 5,615,318).

As per claim 29, and 45, Matsuura teaches a computer-implemented method of generating three-dimensional form data the method comprises the steps of: obtaining an electronic data of a three dimensional form model (col.7, lines 42-50); generating a plurality of lines along a surface of the model (col.12, lines 7-20, lines 43-50; col.14, lines 24-33); modifying the lines in response to a user instruction that includes an adding or a movement of a line so that the plurality of lines still correspond to contour of the model (col.20, lines 3-7, lines 61-67; col.20, lines 18-23).

Matsuura does not explicitly disclose that the generated lines correspond exactly to contours of the model after the modification, and that in either before and after the modification, any one of the lines do not cross with the remaining lines. However, Matsuura teaches that the corresponding level of the lines to the contours of the model is determined from the expansion factor (col.8, lines 47-59; col.11, lines 34-47); that the user is allowed to select adding lines to the meshes (col.12, lines 11-13, lines 1-2, lines 7-8), and that the user is allowed to add internal lines to the existing model (col.20, lines 37-47). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to adjust the expansion factor of Matsuura to zero in order to obtain the generated lines that corresponds exactly to the contours of the model, since adjusting a value to obtain appropriate relative position of the lines to the

Art Unit: 3661

contour of the model requires only routine skill in the art. It would also have been obvious to a person of ordinary skill in the art at the time the invention was made to add or delete lines which does not cross any remaining lines by specifying appropriate coordinate for the added or deleted lines, since selecting the position of the added pattern line according to the cloth designer's preference requires only routine skill in the art.

As per claim 2, 5, refer to claim 29 above. Matsuura does not explicitly teach that the lines comprises parametric or splines curve groups. However, expressing the lines in parametric or spline curves would have been well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to express the lines of Matsuura in parametric or splines curves format in order to facilitate manipulating the lines by changing the parameter of the expression of the lines.

As per claim 38-40, Matsuura teaches a method for processing electronic data. The method comprises the steps of: receiving a first electronic data of a three dimensional model of an object that has been acquired from the object (col.7, lines 43-47); generating a second set of data that represents the first set of uncrossed lines (fig. 17; col.8, lines 16-25; col.12, lines 7-8); generating from the second set of data a third electronic set of data that represent a second set of uncrossed lines, the second portion includes at least one portion that is different from any one of the first portions (at least a line of the second set of uncrossed line is located at a position that is

Art Unit: 3661

different than the lines of the first set of uncrossed lines) (fig.19 (in comparison with fig.17); col.12, lines 11-13). Matsuura does not explicitly teach that the capacity of the second and third electronic data is less than the capacity of the first electronic data. However, since Matsuura teaches that the first data are obtained from the image taken from a camera which is well known to have dense pixels, the second data are just some characteristic points of the object, the third data are just some more added characteristic data onto the image of the first data, Matsuura inherently teaches the capacity of the second and third data is less than the capacity of the first data. Further, refer to discussion in claim 29 above for explanation on the second and third data corresponding exactly to the surface of the model.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (U.S Patent No. 5,615,318) in view of Letcher, Jr. (U.S Patent No. 5,627,949).

As per claim 3, Letcher teaches defining control points and moving control points along the surface of a model (col.16, lines 29-40). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the control point taught by Letcher to move the lines along the surface of the object of Matsuura. The motivation for this would have been to provide the user a convenient graphical user interface so that the user can adjust the lines of Matsuura to obtain a desired amount of lines he needs.

Art Unit: 3661

5. Claims 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (U.S Patent No. 5,615,318) in view of Sato et al (U.S Patent No. 5,754,680) (Sato '680).

As per claim 34, Matsuura does not explicitly teach generating the sum data representing the modified generated lines such that the quantity of the summary data is smaller than the quantity of the three dimensional form data. However, Matsuura teaches the capability to obtain three dimensional form data (col.7, lines 43-48) and the capability of deleting the generated lines (col.20, lines 3-7), and Sato '680 teaches generating a sum of data for representing modified lines with summary data that is smaller than the quantity of the obtained three dimensional form data (col.8, lines 53-61). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to represent the generated lines of Matsuura with data and represent lines with the summary data that is smaller than the three dimensional form data as taught by Sato in order to simplify the design and to reduce the number of data to increase data processing speed.

As per claim 35, Matsuura teaches obtaining the electronic three dimensional form data from a camera (col.7, lines 43-48). Matsuura does not explicitly disclose a generator for generating the electronic data. However, Sato '680 discloses a generator that provides electronic data representing a three dimensional model (col.5, lines 16-19). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the generator of Sato to the shape input unit of Matsuura in order to convert the analog data from the camera of Matsuura to digital data that is compatible with the microprocessor of Matsuura.

Art Unit: 3661

Allowable Subject Matter

6. Claims 9-22, and 37 are allowed.

7. The following is an examiner's statement of reasons for allowance:

Prior art of record does not disclose a method for generating three dimensional form data in which a three dimensional form data representing a three dimensional form model is prepared; a plurality of two-dimensional horizontal closed curves encircling the three dimensional form model but having a space to the three dimensional form model, and a plurality of vertical lines intersecting the closed curves to the three dimensional model are projected around the model; the group of curves can be modified with adding, deleting, or moving operation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Remarks:

Applicant has not addressed the objections to the specification on page 9, 12 and 21 set forth in the office action paper No. 35 and 38 (on July 5, 2002 and January 13, 2003). The objections are repeated herein in this office action.

In view of the applicant's explanations in page 5-6, on the 112 second paragraph issue, the 112 second paragraph rejections on claims 38-40 have been withdrawn. In view of the

Art Unit: 3661

applicant's explanation, the first set of uncrossed lines (generated from the second data set) are read as either the longitude BCP1- BCPm, or the lines BCM1-BCMn in fig. 9A. The second set of uncrossed lines are read as either the longitude lines after the modification (added or deleted or moved) , or the lines BCM1-BCMn after being added, deleted or moved. The rejection on claims 38-40 in this office action is based on the interpretation.

8. Applicant's arguments filed on May 13, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument on page 6, on claims 29 and 45, in page 12, lines 1-2, 7-8, and 11-13, Matsuura teaches the capability to add more lines (dd) to the mesh (bb) (fig.17, and 19), the added lines do not cross any line of the mesh (bb) according to the input instruction of the user (col.11, lines 65-67). Further, Matsuura teaches allowing the user to input the internal lines (col.18-28; fig. 38). Although the internal lines as illustrated in fig.38 cross the plurality of lines as noted by the applicant, the internal lines taught by Matsuura can clearly be drawn without crossing any existing lines. Because Matsuura teaches that the internal lines are generated according to the coordinates the user provides (col.20, lines 18-28), when the user provides the coordinates that does not cross the existing lines, the internal lines will not cross the existing lines. Since the internal lines are generated at a position designated by the user (col.20, lines 18-28), the internal line will not cross the existing lines when designated so by the user.

Applicant's argument on claim 38, on page 7 through page 8 is moot in view of the new ground of rejection.

Art Unit: 3661

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 305-7687, (for formal communications intended for entry)

Or:

(703) 305-7687 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park V, 2451 Crystal Drive,
Arlington, VA., Seventh Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner
should be directed to Thu Nguyen whose telephone number is (703) 306-9130. The examiner
can normally be reached on Monday-Thursday from 8:00 am to 6:00 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, William Cuchlinski, can be reached on (703) 308-3873. The fax phone number for
this Group is (703)305-7687 .

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Group receptionist whose telephone number is (703)308-1111.

Nguyen

Thu Nguyen

July 7, 2003